

PETERS CREEK PLACER PROJECT
Cariboo Mining Division
British Columbia

NTS 93N/4
Latitude 53 01 North
Longitude 121 47 West

Prepared for
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1.0 SUMMARY

Canadian Gravity Recovery Inc. was contracted by Rich Coast Sulphur Ltd. to review all historic data, including a recent placer drilling program performed by Queenstake Resources in 1986, and to make recommendations for a proposed exploration work program.

The property was first discovered in the late 1870's with the drifting of the deep channel gravels at two locations on Peters Creek, known as the Mathers Shaft and Ventures Shaft. It is assumed that some form of unreported exploration must have been undertaken on the upper reaches of Peters Creek prior to this period to justify such expansive underground programs. These two areas were worked intermittently up to 1924.

Three engineers reports on the property provide some insight as to the possible reserves of Peters Creek and are outlined below:

1. In 1922, G.C. Hogg determined that from the mouth of Peters Creek to Campbell Creek, a tributary to Peters Creek, that estimated reserves are in excess 3,000,000 cubic yards of gravel averaging .025 ounces gold per cubic yard.
2. In 1924, W.M. Throne consultant for Kafue Copper Development, drilled 36 churn holes on the property and determined that 1,000,000 cubic yards of gravel grading .015 ounces per cubic yard exists in the middle section of Peter's Creek between Mathers Shaft and Ventures Shaft.
3. Between 1945 and 1950 under the supervision of Grenville Collins, 7 lines of drill holes outlined a deep channel averaging 100 feet wide, 40 feet deep and 5 kilometers long which is amenable to dredging techniques. Mr. Collins estimated reserves to be approximately 4,000,000 cubic yards grading .014 ounces gold per cubic yard for the entire length of Peters Creek.

In 1986, Queenstake drilled 1,000 feet on five lines in the middle section of Peters Creek. The drill program delineated a well defined channel and at several locations two distinct channels paralleling each other. The program established the presence of gold with the channel gravels, however difficult underground drilling conditions resulted in poor gold recovery thus grade determinations were not calculated.

A comprehensive bulk sampling program is recommended at a minimum of ten sample locations. The program depending on location will process between 250 and 1,000 cubic yards of material under control conditions to determine the gold grade throughout the stratigraphic section. Due to unstable ground conditions and a heavy flow of underground water extra support equipment will be required to implement the program. The estimate cost to complete this phase of exploration is \$310,000.

2.0 CONCLUSIONS

- It is evident from previous engineers reports that there is a general agreement that gold reserves are indicated on Peters Creek. The indicated reserves range from a conservative estimate of 15,000 ounces gold to an optimistic estimate of 77,000 ounces gold.
- There is good supportive evidence provided in documents and in physical work in the field that both the Mathers Shaft and Ventures Shaft were production oriented operations and their shut downs were not likely attributed to the lack of gold values however, poor ground conditions and excessive underground water.
- The 1986 placer drill program conducted by Queenstake successfully delineate the presence of the bedrock channel which at several locations splits into two channels. The program also indicated the presence of gold within the lower channel gravels, however, due to difficult drilling conditions gold recovery was poor and grade determinations were not calculated.

3.0 RECOMMENDATIONS

The overwhelming evidence supported by numerous engineering reports and physical work in the field indicate a gold bearing channel exists in Peters Creek, however, poor ground conditions and an excessive below-surface water table have caused previous operations and exploration attempts to fail.

It is recommended that a comprehensive exploration program of bulk sampling be implemented at ten locations along Peters Creek to define the gold grades of the lower channel gravels.

Within Peters Creek there are two exploration targets that require sampling being the bench formation along both limits of Peters Creek and located upstream of Campbell Creek. These formations are up to 15 meters thick and are primarily comprised of clay overburden overlying channel bench gravels. The old timers mined the shallow creek gravels in this area and appeared to explore the bench formation with numerous test shafts, however, it is unsure the extent of this work.

The second target are the channel gravels within Peters Creek that were explored, developed and mined at two locations along Peters Creek, known as the Mathers Shaft and Ventures Shaft. These shafts are located 3 kilometer apart from one another and the ground between, the two shafts and above Ventures Shaft has not been worked.

The recommended work program for both these targets is detailed with cost estimates in Section 3.1

3.1 Detailed Description of Proposed Work Program With Cost Estimates

Target #1 Bench formations, right and left limits Peters Creek upstream of Campbell Creek.

Program: 5 test locations with 250-500 cu.yd bulk samples being processed.

Cost Estimates: (all equipment hourly rates are based on typical lease rates for that area and are consistent with those set by the B.C. Dept. of Highways)

Equipment Required: D7 Dozer, Cat 235 Backhoe, 966 Front-end Loader, Processing Plant inclusive of pump & piping & support equipment.

Cost Breakdown per Sample Location

- Sample Site Preparation (including access, stripping of overburden diversion channels & setting facilities)

D-7 Dozer	(40hrs @ \$100/hr)	\$ 4,000
Cat 235 Backhoe	(40hrs @ \$135/hr)	5,000
- Sample Excavation and Transportation of sample to Processing Site (average sample size = 300 cu.yd)

Cat 235 Backhoe	(10hrs @ \$135/hr)	1,350
Cat 966 Front-end Loader	(15hrs @ \$100/hr)	1,500

- Sample Processing/Clean-up/Engineering
Recovery Plant all inclusive of pump/pipe/personel
(2 days @ \$500/day) 1,000
- Clean-up of Plant, Secondary processing of
concentrate
(1 day @ \$1000/day) 1,000
- Support Equipment & Camp Costs
- (2) 4 X 4 Trucks 500
- 6" Sump Pump 400
- 35 m.d @ \$50/m.d 1,750

Cost/Sample Location \$ 16,500

Cost assume 5 locations \$ 82,500

Total Cost + 15% Contingency \$ 95,000

Target #2 Channel Gravels located from Mathers Shaft
upstream to Campbell Creek.

Program: Bulk test samples at the following
locations: (500-1000 cu.yds)

- 1) Between Carruthers Creek and Campbell Creek
- 2) Between Mathers Creek and Carruthers Creek
- 3) Ventures Shaft
- 4) Upstream of dragline workings which are
located upstream of Mathers Shaft
- 5) Other not assigned

Each of the above locations will require significant sample
site preparation due to the unstable nature of the gravels and depth
to bedrock.

Cost Breakdown per Sample Location.

- Sample Site Preparation (including access & stripping of
overburden, diversion channel, settling ponds)
- D-7 Dozer (50hrs @ \$100/hr) \$ 5,000
- Cat 235 Backhoe (50hrs @ \$135/hr) 6,750
- Cat 966 Loader (50hrs @ \$100/hr) 5,000
- Sample Excavation and Transportation of sample to
Processing Site (average sample size 700 cu.yd)
- Cat 235 Backhoe (20hrs @ \$135/hr) 2,700
- Cat 966 Front-end Loader (35hrs @ \$100/hr) 3,500

- Sample Processing/Clean-up/Engineering
Recovery Plant all inclusive of pump/pipe/
personel
(4 days @ \$500/day) 2,000
- Clean-up of Plant, Secondary processing of
concentrate
(2 days @ \$1,000/day) 2,000
- Support Equipment and Camp Costs
- (2) 4 X 4 Truck 1,000
- 6" Sump Pump 600
- 70 m.d @ \$50/m.d 3,500

Cost/Sample Location \$ 32,050

Cost assume 5 locations \$160,250

Total Cost + 15% Contingency \$185,000

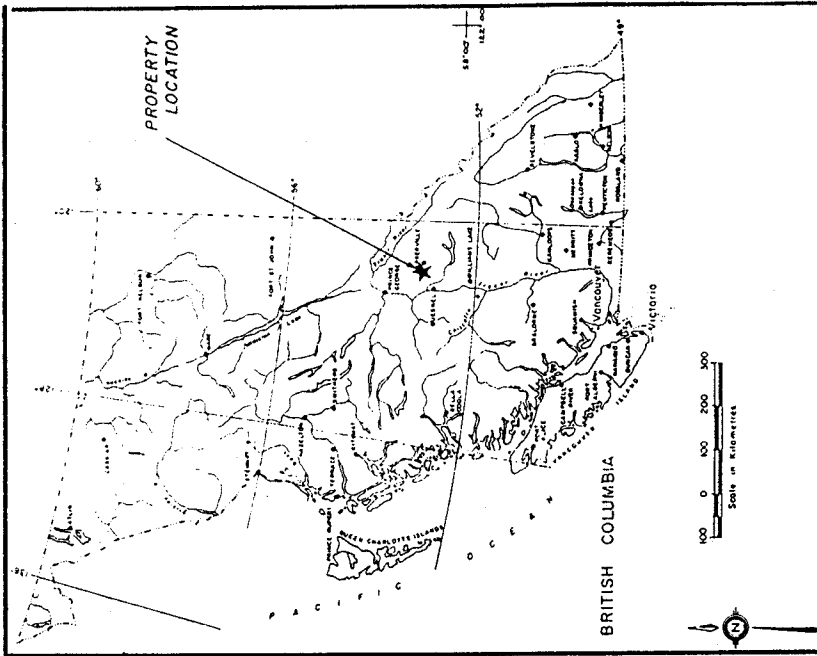
- Engineering Support and Studies including
the following:
 - necessary government applications, permitting
 - quality control of sampling program
 - survey and mapping
 - field supervision
 - reports
 - laboratory analysis
 - administration
- \$ 30,000

Total Exploration Program to
Peters Creek (Phase 1) \$310,000

4.0 PROPERTY DESCRIPTION

4.1 Location

The Peters Creek placer project is located 60 kilometers east of Quesnel, British Columbia, and is situated within NTS Mapsheet 93N/4 in the Cariboo Mining Division, at latitude 53 01 north and longitude 121 47 west (Figure I). Peters Creek is a major tributary to Lightning Creek with the confluence of the two creeks being 55 kilometers east of Quesnel.



PETERS CREEK PLACER PROJECT

LOCATION & PROPERTY MAP

PLAN NO.

DRAWN

DATE JUNE 88

W.T.S.

FIGURE

7

Scale 1:50 000

4.2 Access

Peters Creek is readily accessible from Quesnel, British Columbia via highway 26, a paved government road providing access to the Wells area. At the 53 kilometer mark, 5 kilometers past the Troll Ski Hill, a good forestry gravel road provides preliminary access to various locations along Peters Creek. The lower 6 kilometers of Peters Creek above Peters Creek bridge can be accessed with a four wheeled drive vehicle along a tote road that parallels Peters Creek to the Mathers Creek tributary. Access to the upper reaches is from the main forestry road which parallels the northern slopes of Peters Creek up to Bassford Creek. Exploration within the upper reaches of Peters Creek, either upperstream or downstream of Bassford Creek, must be facilitated with new tote road construction. Due to unstable ground conditions in these areas it is probable that only track mounted or large rubber tired machinery will be able to work these areas.

4.3 Specific Land Data

The Peters Creek placer project is a consolidation of thirteen (13) placer leases owned by two parties. The property is situated on mapsheet NTS 93N/4, and is in the Cariboo Mining Division. A summary of the individual placer leases is outlined below and illustrated on Figure I.

Rich Coast Sulphur Ltd. has entered into an agreement with Vic Guinet and the partnership of Vic Guinet and Bill Dyson to explore, develop and mine the property.

<u>Lease Number</u>	<u>Registered Owner</u>	<u>Expiry Date</u>	<u>Grouping No.</u>
PL 14648	Vic Guinet	June 1, 1989	?
PL 14649	"	"	
PL 14650	"	"	
PL 14651	"	"	
PL 14653	"	"	
PL 15360	"	"	
PL 15361	"	"	
PL 15362	"	"	
PL 15158	50/50 Vic Guinet &	July 15, 1988	966
PL 15157	Bill Dyson	"	"
PML 7210	"	"	"
PL 3542	"	"	"
PL 3543	"	"	"

4.4 General Geographic Setting and Climate

Peters Creek represents one of the larger tributaries flowing into Lightning Creek and has a drainage basin of approximately 36 square kilometers. The prominent drainage of Peters Creek is to the northwest while the average gradient is 3%. The estimated mean flow for the Peters Creek drainage basin is 13 c.f.s.

Peters Creek is well defined by both moderately sloping northern and southern limits and has an average valley width of 65 meters. The area is heavily timbered with fir and spruce and has been actively logged by Weldwood of Canada over the past five years.

The nearest weather station to Peters Creek is Barkerville located approximately 20 kilometers to the east. The following weather statistics are from Atmospheric Environment Services provide the mean statistical summaries for the year 1951-1981.

Annual Rainfall (excludes snow equivalent)	505.7 mm
for the months of:	

June	88.5 mm
July	81.6 mm
August	102.2 mm
September	81.4 mm

Annual Snowfall	538.4 mm
Annual Precipitation	1,043.9 mm

Daily Temperatures (Max/Min)	7.1 C to -4.3 C
for the months of:	

June	16.0 C to 3.1 C
July	19.0 C to 5.2 C
August	18.1 C to 5.0 C
September	13.9 C to 1.6 C

The above conditions would facilitate a mining operation working the season between April and November of each year.

4.5 Property History

Peters Creek history is well documented in Geological Survey Memoir 149, by W.A. Johnston and W.C. Uglow (pg. 177-81) and in engineering reports by George C. Hogg (1922), W.M. Throne (1924) and Genville Collins (1951). The following is a summary of Peters Creek mining history.

Late 1870's:

Ground sluicing of shallow gravels on upper reaches of Peters Creek with subsequent drifting on deep channel gravels of Peters Creek at two locations known as Mathers and Ventures Shafts.

1905 - 1907:

Premier and White Star companies under management of J.G. Mathers reopen Mathers Shaft, equip shaft with a water wheel and 6 1/2 inch Cornish pump completed 300 feet of drifting. No further work after 1907.

1908 - 1911:

Mining work carried out on Ventures Shaft, good gold values recovered, however experienced trouble with excess water seeping into the workings.

1921:

Construction Mining Company, again reopened the mine and drifted a further 250 feet. Gold values reported as high as 6 1/2 ounces to a set of 6 feet were obtained.

1922:

Ongoing numerous hand workings in upper reaches of Peters Creek and tributaries with nuggets as large as 5 ounces reported.

G.C. Hogg examined Peters Creek from its mouth to Campbell Creek, a tributary to Peters Creek and estimated reserves of over 3,000,000 million cubic yards of gravel averaging .025 ounces gold per cubic yard.

1924:

W.M. Throne for Kafue Copper Development Company, drilled 36 holes on the property and determined that 1,000,000 cubic yards of gravel grading .015 ounces per cubic yard existed in the middle section of Peters Creek between Mathers Shaft and Ventures Shaft.

1945 - 1950:

Under the supervision of Genville Collins, 7 lines of drill holes were drilled to bedrock. The program outlined a deep channel averaging 100 feet wide, 40 feet deep and 5 miles long which is amenable to dredging techniques. Mr. Collins estimated reserves to be approximately 4,000,000 cubic yards grading .014 ounces per cubic yard for the entire length of Peters Creek.

1960's

Dragline operation successfully operated lower reaches of Peters Creek, above Mathers Shaft, however slope sluff material and poor equipment personnel shut operation down.

5.0 ALLUVIAL GEOLOGY

Most of the information regarding the alluvial geology of Peters Creek is from the interpretation of old drill hole data and personal communication with Mr. Victor Guinet. In the lower 3 kilometers of Peters Creek, below Mathers Shaft up to 38 meters of glacial and post glacial material overlies bedrock. The upper 21 meters predominately consists of slum, a water saturated silt interbedded with sand to fine gravels. This section overlies 12 meters of glacial boulder clay and 5 meters of fine gravels. Though one engineering report outlined moderate gold values in the lower 17 meters of material above bedrock it is being discounted in present reserve analysis.

The middle section of Peters Creek between the Mathers Shaft and Ventures Shaft the ground is considerably shallower and a continuous gold bearing Tertiary (?) channel has been outlined by drilling along the left limit of Peters Creek. Underground mining at both these locations confirms the presense of channel gravels and associated high gold values. At the Mathers Shaft the alluvial sequence is 23 meters thick, while at the Ventures Shaft it is 12 meters thick. In the area of the Mathers Shaft 6 meters of post glacial outwash gravels overlie a 15 meter thick sequence of glacial drift. The deep gold bearing channel is approximately 2.3 meters thick and overlies bedrock. The only difference at the Ventures Shaft location is that the glacial drift section thins out significantly to less than a meter.

6.0 1986 PLACER DRILL PROGRAM

During 1986 Queenstake Resources conducted a preliminary placer drilling program on the lower and middle reaches of Peters Creek with the objective of determining the validity of previous engineering reports which had outlined between 15,000 and 77,000 ounces of gold reserves.

Twenty six holes located along five drill lines in the area between the old sawmill site and Mathers Creek were drilled. The program utilized the Becker Hammer drill system (top-the-hole hammer) which was successful in defining the bedrock depths and stratigraphy types. The results from the program were disappointing and grade determinations were not calculated. The poor gold recovery is likely attributed to the combination of 1) loosely consolidated nature of the channel gravels, 2) the presence of an active underground water table and 3) the use of air as a medium to return drill chip samples to the cyclone.

The drill program did delineate a well defined channel and at several locations two distinct channels paralleling each other. The program also established the presence of gold within the channel gravels and existence of underground workings in the Ventures Shaft area. The significance of the extensive underground workings is important as it validates old engineering reports and the probability of high grade gold values. The Ventures Shaft operation appears to have been a serious long term venture whose likely demise was the poor underground conditions and the abundance of underground water.

The program also confirmed that the depth to bedrock which where drilled varied from 10 meters to 15 meters. The width of either the channel or the multiple channels varied from 20 meters to 65 meters.

Though drill grades were unable to be determined sufficient positive data indicates the presence of a gold bearing channel(s) within Peters Creek.

7.0 ECONOMIC GEOLOGY

Previous engineers between the years 1922 and 1945 have implied geological reserves along various locations of Peters Creek based on their respective sampling programs, which typically included either churn drill holes or test shafts.

In 1922, George C. Hogg conducted a sampling program on Peters Creek of which findings are summarized below:

- sampling the Mathers Shaft indicated values of .13 ounces gold per cubic yard of pre-glacial gravels over a six foot section above bedrock.
- estimated grades of channel gravels determined from the Ventures Shaft, some 3.6 kilometers upstream from the Mathers Shaft, are .16 ounces gold per cubic yard.
- average value of material sampled from 43 test pits located along 14 lines is .025 ounces gold per cubic yard.
- estimated reserves from the mouth of Peters Creek to Campbell Creek are 3,200,000 yards grading .025 ounces gold per cubic yard.

In 1926 Geological Survey Bulletin by Johnston-Uglow, on page 181, states as follows: 'Mr. Thorne states that some gold was obtained in the surface gravels and in the bedrock gravels and that very fair values were obtained in a few of the holes (drill holes), but that the average value of the ground is much less than as estimated by Mr. Hogg. Mr. Thorne estimated that there is possibly 1,000,000 cu. yds. of 30-cent ground (old price) (.015 oz/cu.yd) in the middle sections of the creek, the average depth of ground being 35 feet.'

A further study in 1945 by Genville A. Collins included a churn drilling program of which is summarized below:

- drill line #1 located between Mathers and Carruthers Creeks; hole #3 .020 oz/cu.yd over 45'
- drill line #2 located 1000' downstream of drill line #1 near mouth of Mathers Creek; heavy gold from 23 to 43' and averaging .018 oz/cu.yd over 43'
- drill line #3 located 1/2 mile above Mathers Shaft; showed poor gold values
- drill line #4 located 1000' above line #3; showed poor gold values
- drill line #5 located 1000' above line #4; showed .006 oz/cu.yd over 44'
- drill line #6 located 1000' above line #5; .004 oz/cu.yd over 42'
- drill line #7 located 1000' above line #6; .011 oz/cu.yd over 32'
- Geological inferred reserves assuming 100' wide, 40' deep and 5 miles long would equate to 4,000,000 cubic yards grading .014 ounces gold per cubic yard.

In summary the three engineers reports consistantly indicated the presence of gold bearing gravels within Peters Creek. Inferred gold reserves by G.C. Hogg (1922) are 77,000 ounces, by Throne (1924) 15,000 ounces and by G.A. Collins (1945) 56,000 ounces. It should be noted that Mr. Throne's gold reserves only include the ground between the Mathers Shaft and Ventures Shaft and did not include the upper 5 kilometers of Peters Creek.

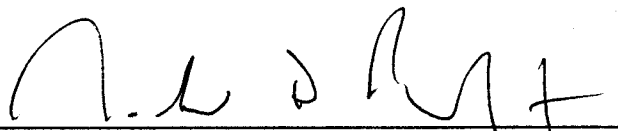
APPENDIX I
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, MICHAEL D. PHILPOT, President of Canadian Gravity Recovery Inc., with a business address of Suite 920 - 625 Howe Street, Vancouver, British Columbia, DO HEREBY CERTIFY:

1. THAT I am a graduate from the University of British Columbia (1978) with a B.Sc. degree majoring in Geology. I am also a graduate from City University (1986) with an M.B.A. degree majoring in Business Administration;
2. THAT from 1978 to present, I have been actively engaged in various disciplines relating to the mining industry throughout western North America;
3. THAT I personally supervised the placer drilling program for Queenstake Resources in 1986 and have been engaged by Rich Coast Sulphur Ltd. to review all previous data and to recommend a further exploration program;
4. THAT I have no interest in Rich Coast Sulphur Ltd. or in the subject property, nor do I expect to receive any such interest;
5. THAT I am a Fellow of the Geological Association of Canada; and
6. THAT I approve of this report or direct quotes from it being used for a Prospectus, Statement of Material Facts or in a News Release, provided that all excerpts are taken in total context of relevant passage.

DATED at Vancouver, British Columbia, this _____ day of June, 1988.



Michael D. Philpot, B.Sc., M.B.A.

APPENDIX II

REFERENCES

REFERENCES

- W.E. Cockfield 1933, "Summary Report Part A Willow River Map Area" Page 53A.
- G.A. Collins 1951, "Peters Creek", Private Report for Collins Pacific Ltd.
- G.C. Hogg 1922, "Report on Peters Creek" Private Report.
- W.A. Johnston & W.L. Uglow 1926, "Geological Survey of Canada Memoir 149" Pages 197-181.